VOLUNTEER NETWORK SUPPORT GROUP
FOR PEOPLE WITH DISABILITIES

BACKGROUND OF THE INVENTION

5

Field of the Invention

This invention generally relate to a business method for providing help to people with disabilities by organizing a network of volunteers and technical means for

10   communicating for supporting the network.

Prior Art

Often times people need assistance when no professional help is available. For example, if someone on a train is

15   hurt or in need of medical assistance, then a loudspeaker may announce that a doctor is needed. A similar scenario may occur on an airplane. This is an example of being able to help someone who is in obvious need of medical attention and people have noticed. Another example of

20   people with disabilities receiving aid from people in their near surroundings is when a blind person is attempting to cross the street. In some instances, a passing stranger may assist the blind person in crossing the street safely.

25

These are examples of how people with disabilities may receive assistance from others in their environment. However, there are numerous other examples and scenarios where people in need of assistance do not receive any

30   aid. It is necessary to set up a system where people

YOR920000454US1

with many types of disabilities can receive assistance from volunteers.

SUMMARY OF THE INVENTION

One object of the invention is to provide a business method for organizing volunteers for helping people with disabilities.

Another object of the invention is to provide technical means that support communication between volunteers and people with disabilities (PwD) through network.

Another object of the invention is a mechanism for choosing volunteers that match Pwd needs.

In accordance with this invention, people who would like to assist people with disabilities may join a service and receive a wearable device or a palmtop that can communicate wirelessly through a network. People that join the volunteer network describe the type of disability they are willing/certified to assist with, available time and other relevant information. People with disabilities also join the volunteer service network and are provided with a wearable wireless device (i.e. Palm top). Disabled persons also specify their particular disability as well as services that they may require.

An example of how these volunteers may be of use is: When a volunteer is going to work in the morning on the train,

the service can connect them through the network to a
blind person, and the volunteer may assist the blind
person by reading a newspaper through the wireless device
(like a cellular telephone). Another example is if a

5   volunteer knows sign language and a hearing impaired
person is in need of an interpreter, the audio of the
conversation of the disabled person can be transmitted
via the wireless device to the volunteer who can, in
turn, translate into sign language and be visually

10   depicted on a screen of the disabled person; or if the
volunteer is nearby, they can send a signal to the
hearing-impaired person that they will come and assist
them as soon as possible. Global positioning may be used
in order to assist in determining the positions of

15   volunteers and disabled persons to provide more efficient
and expedient assistance to people who are near to each
other.

Another example is, if a person is unable to move (i.e.

20   quadriplegic, Multiple Sclerosis, Parkinson's Disease,
etc.) and needs some type of goods, whether clothing or
food. This person may contact the Volunteer Network with
a request, and the system can find a volunteer who is
near or maybe even in the same building who can bring the

25   requested item. If any prescriptions or medicines need
to be delivered by somebody who is in the vicinity of
another volunteer, the system can find them and request
the two volunteers to cooperate in the retrieval and
delivery of the medicines (or other goods). A more

detailed description of the methodology and examples may be found in the detailed description of figures.

Further benefits and advantages of the invention will become apparent from a consideration of the following detailed description, given with reference to the accompanying drawings, which specify and show preferred embodiments of the invention.

Brief Description of The Drawings

Figure 1 is a general block diagram illustrating a network embodying this invention.

Figure 2 shows an example of a database of persons with disabilities.

Figure 3 shows an example of a database of volunteers.

Figure 4 describes a matching server that may be employed in the network of Figure 1.

Figure 5 describes a cellular portable device that may be used in the network of Figure 1.

Figure 6 is a flow chart illustrating a method of practicing this invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Module 100 in Figure 1 symbolizes the general network.
People 103, 104 that carry the wireless/cellular device
108 are connected to the network 100. The wireless
device 108 may also transmit to another wireless device
108. If there is a crowd of people 130 and the person
103 needs assistance but does not know where to go on
street 140, person 103 can send a signal to person 104
via the wireless devices 108 that help is needed. This
signal from 108 to 108 is sent locally and not through
the network because these people are not far from each
other and the volunteer 104 receives the message via
audio or beep/text. Because these people are not far from
each other, volunteer 104 can notice the disabled
person/person in need of assistance and walk/drive over
and assist the person.

Another scenario for the implementation of this device is
on a train 106 and there are two people with two devices,
person 111 with device 109 and person 107 with device
109, sitting in different parts of the train. If person
107 needs assistance with a conversation (a sign
interpreter) the person sends a signal through the device
109 through a cellular provider 120 that sends a signal
to the global positioning system 110 that notifies the
person of the volunteer's location. The device 109 then
sends this information to a local cellular provider that
sends a signal to any volunteers on the train (that may
know sign language) through their device 109 that may

then come to the person in need of assistance 107 and
translate for them. The network is connected to a
database 101 that contains a description of all of the
people with disabilities that are connected to the server

5   105. A detailed description of the information on the
database is given below. Another database of volunteers
102 is connected to the server 105 via the network 100.
The particulars of the volunteer database will be further
discussed below.

10

The matching server 105 uses the information in database
servers 101 and 102 to notify people with disabilities
and volunteers what types of services it may offer. For
example, the matching server may find some people who

15   need a newspaper read to them because they are blind
during a certain time. The matching server finds that
there are volunteers available to assist the blind people
(because they may be riding home from work on the train)
and the server contacts the volunteers and asks them to

20   read the newspaper/book or other information to the
disable persons over the cellular phone. As in the
previous example where person 111 can read a newspaper
over the cellular phone to person in need of assistance
140 at home 150.

25

There two different ways how people may find themselves.
The global positioning system that finds the coordinates
of people, where two people are connected to the network
and they require assistance, they send a message through

30   the network to two people who may be able to assist them

and the global positioning system helps them find each other.

The GPS satellites are highly accurate atomic clocks. They broadcast their current time using extremely wide band signals. The receiver picks up the time from (at least) four satellites and measures the difference in arrival times from each. Because the satellites are at known coordinates in geosychronous orbit, the differences in arrival time of the radio signals can be used to determine the distance the receiver is from each satellite. This is normally accurate to a few meters. However, the military perturbs the time signals using random noise to control the accuracy in what is known as "selective availability."

There also exist D-GPS or differential GPS systems, in which case a fixed ground based transmitter sends its location and time to a D-GPS receiver. These systems send "corrections" to the time signals that are perturbed by the military. In so doing, the GPS accuracy can increase to a few meters. Using more advanced techniques, for stationary objects, it is possible to actually achieve accuracy in the centimeter range (essentially using a form of interferometry. In any case, there is no signal sent out from the GPS receivers. They know where they are relative to the GPS satellites, which are all in know spatial coordinates.

With reference again to Figure 1, The matching server may also have access to information about routes and local maps in order to assist the users in finding each other. The matching server also has access to a disabled persons needs, addresses, necessary medications and other information from the database of people with needs and disabilities 101.

Figure 2 provides a detailed example of the database of people with disabilities 101. Module 200 contains the name of the person with disabilities. Module 201 is a description of the person's needs. For instance, 201 may say that the person needs a newspaper read to them, medicine or groceries brought to them, or a conversation translated into sign/or other language. Module 202 notes the type of handicap- blind, hearing-impaired, paralyzed, etc. Module 203 gives a history of prior assistance and help that may guide future volunteers as well as for statistical information that can aid the matching server in creating more efficient and satisfactory service. The matching server can use this information to help plan outlines for assistance for future volunteers. Module 204 is a list of volunteers who helped the disabled person in the past which is connected to the history 203, in order to find a volunteer with experience that is able to help quickly. Module 205 gives a description of methods of how to assist a disabled person. For instance, if a person needs a newspaper read to them, the system may describe a method for how a volunteer can read the newspaper over the phone; or, if a person needs to go

to an office or receive information, then the system
notes that the person requires an interpreter.

Figure 3 is a detailed example of a database of
volunteers 102. Module 300 indicates the name of the
volunteer. Module 301 describes the skills of the
volunteers, for example- sign language or masseuse
therapist. Module 302 gives a description of services
that the volunteer could offer. Module 303 gives a
history of people the volunteer has helped. This
information assists the matching server in assembling a
statistical history that aids optimizing volunteer
assistance to people with disabilities. Module 304 gives
a list of the people with disabilities that the volunteer
has helped. Module 305 gives a list of expenses of the
volunteer so they may be reimbursed or tax-deductible
like a donation.

Figure 4 is a detailed outline of the matching server
105. The matching server receives input from the
database of people with disabilities 101 and the database
of volunteers 102. The input goes into the communication
module 402 in the matching server. The communication
module is connected to the network and uses data from the
databases in order to choose the correct volunteer that
may assist a given person with disabilities. The
communication module 402 also receives requests from the
person with disabilities 400 through the network
(wireless). When the communication module receives a
request it contacts both of the databases 101 and 102 and

decides to which volunteers it can send messages. In other words, when the module chooses an appropriate number of volunteers and people with disabilities, this information enters into module 403, the request

5   processor.

From the moment a request from a person with disabilities comes in, the information goes into the request processor that processes the information of the person (names,

10   needs, location 405). The location may be determined with a global positioning system through cellular devices. After a processor has determined the name of the person it does a search in volunteer database 404 to determine which volunteers have the functions that may

15   assist the person with disabilities. It also retrieves an image of the person with disabilities in order to determine which type of people have already assisted the person. This information goes into the comparator 406 where volunteers with different functions, abilities, and

20   certifications are compared as well as their locations with the people with disabilities: who helped who when, was it satisfactory? The comparator makes a candidate list 407 with names of volunteers, ranking of satisfaction of person with disabilities, ways they may

25   serve the people with disabilities. At this point, there is the option to either send the message to several volunteers (if they are all on the same train they may all go to assist the person in need). The other option is to have a dialogue module 408 between the volunteer

30   and the person with disabilities to find a good match.

The module 408 may send information about the location
and nature of the problem to the volunteer and receive a
response whether the volunteer wishes to assist the
person. After several questions, the dialogue module and
the comparator sends information into the final chooser
which picks the best candidates and sends them a request
to attend to the person with disabilities. 408 and 409
also check for a confirmation and turns off once one has
been reached. If there is no confirmation received, a
message is sent to another candidate.

Figure 5 gives a detailed description of the cellular
portable device that the persons with disabilities and
volunteers carry in order to communicate. Module 500 is
the communicator that communicates with the network.
Module 501 is the cellular transmitter to send a signal
to and from the user (information about helping). Module
502 receives and sends information by a Global
positioning system reader through a satellite. Module
503 are the different means of input: keyboard, mouse,
ASR, AHR. Module 504 is the output means Speaker,
Display, and others, among them module 505 which is the
GUI interface. The GUI interface allows for effective
operation of the device. Additionally there is the
option for map display, a clock and a beeper (announcing
a message) in module 506.

Figure 6 is a flowchart of a preferred embodiment of the
invention. Module 600 is when the person with

disabilities sends a request for help. In 601, the matching server searches the people with disabilities and volunteers to find a list of candidates and methods of help. In module 602 (optional because can give coordinates), defines the locations via Global Positioning system. Module 603 sends a request to the list of candidates to treat locations. Module 604 is interacting with candidates to find the final choice. Module 605 sending final request and wait for conformation. Module 606 volunteers perform work to help people with disabilities after they have been chosen.

While it is apparent that the invention herein disclosed is well calculated to fulfill the objects stated above, it will be appreciated that numerous modifications and embodiments may be devised by those skilled in the art, and it is intended that the appended claims cover all such modifications and embodiments as fall within the true spirit and scope of the present invention.